

WHAT IS CLAIMED IS:

1. A method for waterproofing a wire harness comprising:

providing a wire harness including a plurality of electric wires;

applying a filler to the electric wires at a predetermined waterproofing portion of said wire harness;

winding a sheet around a peripheral surface of a bundle of said electric wires to which said filler has been applied; and

pressing the sheet covered waterproofing portion of said wire harness to produce spreading and penetration of said filler into gaps between the sheet and the electric wires and gaps between the electric wires.

2. The method for waterproofing a wire harness according to claim 1, wherein said pressing includes initially pressing the sheet covered waterproofing portion of said wire harness in a first radial direction, and thereafter pressing the sheet covered waterproofing portion of said wire harness in a second radial direction.

3. The method for waterproofing a wire harness according to claim 1, wherein said pressing includes repeatedly patting the sheet covered waterproofing portion of said wire harness.

4. The method for waterproofing a wire harness according to claim 1, wherein the waterproofing portion is pressed while the wire harness is continuously fed along a feed path.

5. The method for waterproofing a wire harness according to claim 1, wherein the waterproofing portion of said wire harness is radially pressed by a clamping mechanism, and a pressing position of said waterproofing portion is altered by a rotation mechanism that rotates the clamping mechanism about an axis of the waterproofing portion.

6. A wire harness including a waterproofing portion formed according to the method of claim 1.

7. An apparatus for waterproofing a wire harness comprising:

a clamping mechanism configured to clamp a waterproofing portion of a bundle of electric wires of a wire harness so that the bundle is pressed in a radial direction thereof, the waterproofing portion including a sheet wound around the bundle of electric wires and a filler for sealing gaps between the electric wires and the sheet;

a rotation mechanism configured to rotate said clamping mechanism about an axis of the waterproofing portion; and

a controller that controls operation of said clamping mechanism and said rotation mechanism so that at predetermined time intervals, said rotation mechanism alters a pressing position of the waterproofing portion by rotating said clamping mechanism relative to the waterproofing portion.

8. The apparatus for waterproofing a wire harness according to claim 7, wherein said clamping mechanism is substantially U-shaped and includes opposing arms configured to receive the waterproofing portion therebetween.

9. The apparatus for waterproofing a wire harness according to claim 7, wherein said clamping mechanism repeatedly pats the waterproofing portion.

10. The apparatus for waterproofing a wire harness according to claim 7, wherein said rotation mechanism includes an introduction groove containing gear connected with said clamping mechanism for rotation therewith, and having an introduction groove configured to receive the waterproofing portion therein, and a driving mechanism including an output gear configured to engage and drive said introduction groove containing gear to rotate said clamping mechanism about the axis of the waterproofing portion.

11. The apparatus for waterproofing a wire harness according to claim 7, wherein the wire harness is continuously fed along a feed path in a downstream direction at a predetermined speed, said apparatus further comprising a movement mechanism configured to move said clamping mechanism in the downstream direction at the predetermined speed during clamping of the waterproofing portion.

12. The apparatus for waterproofing a wire harness according to claim 11, further comprising a detector that detects a position of the wire harness along the feed path.

13. The apparatus for waterproofing a wire harness according to claim 12, wherein said detector detects a leading edge of an assembly board on which the wire harness is fed along the feed path.

14. An apparatus for waterproofing a wire harness comprising:  
a clamping mechanism configured to clamp a waterproofing portion of a bundle of electric wires of a wire harness so that the bundle is pressed in a first radial direction thereof, the waterproofing portion including a sheet wound around the bundle of electric wires and a filler for sealing gaps between the electric wires and the sheet; and  
a rotation mechanism configured to rotate said clamping mechanism about an axis of the waterproofing portion so that said clamping mechanism presses the bundle in a second radial direction thereof.

15. The apparatus for waterproofing a wire harness according to claim 14, wherein said clamping mechanism is substantially U-shaped and includes opposing arms configured to receive the waterproofing portion therebetween.

16. The apparatus for waterproofing a wire harness according to claim 14, wherein said clamping mechanism repeatedly pats the waterproofing portion.

17. The apparatus for waterproofing a wire harness according to claim 14,

wherein said rotation mechanism includes an introduction groove containing gear connected with said clamping mechanism for rotation therewith, and having an introduction groove configured to receive the waterproofing portion therein, and a driving mechanism including an output gear configured to engage and drive said introduction groove containing gear to rotate said clamping mechanism about the axis of the waterproofing portion.

18. The apparatus for waterproofing a wire harness according to claim 14, wherein the wire harness is continuously fed along a feed path in a downstream direction at a predetermined speed, said apparatus further comprising a movement mechanism configured to move said clamping mechanism in the downstream direction at the predetermined speed during clamping of the waterproofing portion.

19. The apparatus for waterproofing a wire harness according to claim 18, further comprising a detector that detects a position of the wire harness along the feed path.

20. The apparatus for waterproofing a wire harness according to claim 19, wherein said detector detects a leading edge of an assembly board on which the wire harness is fed along the feed path.